

# *Montana* *Comprehensive Assessment* *System (MontCAS CRT)*

GRADE 7  
COMMON RELEASED ITEMS  
SPRING 2010



[opi.mt.gov](http://opi.mt.gov)

Montana  
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Denise Juneau, State Superintendent

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# Reading Directions for Spring CRT

This Reading test contains three test sessions. Mark or write your answers in the Answer Booklet. Use a pencil to mark or write your answers.

This test includes two types of questions: multiple-choice and constructed-response questions.

For the multiple-choice questions, you will be given four answer choices—A, B, C, and D. You are to choose the correct answer from the four choices. Each question has only one answer. After you have chosen the correct answer to a question, find the question number in your Answer Booklet and completely fill in the circle for the answer you chose. Be sure the question number in the Answer Booklet matches the question number in the Test Booklet. The example below shows how to completely fill in the circle.

CORRECT MARK	INCORRECT MARKS
<input checked="" type="radio"/>	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input checked="" type="radio"/>

If you decide to change your answer to a question, erase the wrong mark completely before filling in the circle of the new answer. Be sure you have only one answer marked for each question. **If two circles are bubbled in for the same question, that question will be scored as incorrect.**

If you are having difficulty answering a question, skip the question and come back to it later. Make sure you skip the circle for the question in your Answer Booklet.

For the other types of questions in the Test Booklet, you will be asked to write your answers in the box provided. Read the question carefully. If a question asks you to explain your answer or to show your work, be sure to do so.

You may make notes or use highlighters in your Test Booklet, but you must bubble or write your final answers in your Answer Booklet. **Do not make any stray or unnecessary marks in your Answer Booklet.**

Let's work through a sample question together to be sure you understand the directions.

## Sample Question

- What is the capital of Montana?
  - Browning
  - Glendive
  - Helena
  - Missoula

# Reading

*Read this story about a merchant with an unusual product. Then answer the questions that follow.*

## **The Merchant with Nothing to Sell**

*Blanche Luria Serwer*

Many years ago, a ship on the high seas carried merchants to foreign ports and with them their merchandise to sell abroad. All day long, the merchants stood talking in groups on the vessel's deck. They boasted of their silks, their precious gems, their silver and gold dishes, and other riches which were stored in the ship's hold.

**2** Sometimes the ocean was calm without a ripple of movement. At other times it was stormy, and the waves rose high above the ship. Still they talked of their fortunes.

Among them was one passenger who listened, but did not speak. If asked about his work or his fortune, he would answer, "Like you, I am a merchant with valuable things to sell." But he carried no silks, no precious gems, no silver and gold dishes or other riches.

The merchants laughed aloud. "Where, then, is your merchandise?" they jeered. "How can you be a merchant when you have nothing to sell?"

Every day they mocked him. "A merchant with nothing to sell!" they teased.

He smiled and said, "My merchandise is more precious than yours, though it fills no space in the hold."

One day, a black-sailed vessel stopped the merchants' ship. Marauding pirates robbed them of everything, all the silks, precious gems, gold and silver dishes and jewelry. Stripped of their personal possessions, the merchants were lucky to remain alive. Clad in rags, they could no longer boast of their riches.

**8** amassed Soon the ship landed in the foreign port where they were to have sold their possessions and great fortunes. Instead, they filed down the gangplank in their torn, makeshift garb and walked to the city.

What were they to do? A kind man stopped and gave them a coin. Soon they became beggars, walking from house to house, getting food where they could. Sometimes they starved; sometimes they ate berries in the fields outside the city. But always they talked of their past riches and splendor, lost to the pirates.

The merchant who had carried no goods with him also went into the city. But he did not beg. Since he was a well-educated man, his merchandise was stored in his mind. He walked directly to the House of Study, where he met other learned men. They were amazed at the extent of his knowledge and soon asked him to join them in teaching and studying. They gave him clothing, food, and lodging. Before many months had passed, he became a highly respected man in his new country. He walked in the streets with scholars and enjoyed the honors heaped upon him.

One day, he chanced to meet some of the merchants who had mocked him during the journey onboard the merchant vessel. They expressed great surprise at his happy and prosperous appearance.

“How did you succeed so quickly in achieving fame and fortune in this new land?” they asked in amazement.

His answer was simply, “Did I not tell you that my merchandise was more valuable than yours?”

1. The **main** purpose of the first paragraph is to show
  - A. how the merchants will reach their destination.
  - B. what the merchants believe is important in life.
  - C. why the merchants plan to sell their merchandise.
  - D. where the merchants found the riches they possess.
2. In paragraph 2, the descriptions of the sea are **most likely** provided to
  - A. compare the long trip across the sea to landing in a foreign port.
  - B. suggest that the ship is in good condition and can withstand a rough journey.
  - C. show how the words of the merchants were as unpredictable as the sea.
  - D. contrast the changing seas with the repetitive conversations of the merchants.
3. In paragraph 8, the word amassed could **best** be replaced by the word
  - A. recovered.
  - B. collected.
  - C. replaced.
  - D. delivered.
4. Which word **best** describes the merchants who became beggars?
  - A. proud
  - B. successful
  - C. humble
  - D. foolish
5. The valuable merchandise of the merchant with nothing to sell is
  - A. knowledge.
  - B. courage.
  - C. kindness.
  - D. patience.

6. Where does this story take place?

- A. in a modern sea community
- B. long ago near an unknown port
- C. in an ancient city on a mountain
- D. in a present-day distant land

7. The **main** purpose of this story is to

- A. introduce a character who is ridiculed by others.
- B. teach a lesson about the importance of knowledge.
- C. describe the dangers of traveling by sea in early times.
- D. illustrate the difficulties of finding success in a foreign land.

## Paws with a Cause

The Absaroka-Beartooth Wilderness Area is a bad place to be lost. Located in southern Montana, just north of Wyoming and Yellowstone National Park, it's full of high, jagged peaks and thick, dark forest. The weather is unpredictable, often dangerous. Trails are few and far between. And as its name suggests, there are bears. Grizzly bears.

For Scout Nathan Polakoff, this is all just fine. Nathan, a member of Pack 481, Red Lodge, Mont., is trying to get lost. And now, wedged between two big boulders somewhere on a steeply sloping hillside, he's pretty sure he has done it. Taking out his walkie-talkie, he presses a button and speaks: "O.K., Dad, I'm in position."



practicing with Winda. Nathan, who is still too young to join the search-and-rescue team, helps his father out by playing the part of the missing person.

When Winda finds Nathan during training sessions, she's rewarded with her favorite toy: a chewable rubber Kong.

Now 5 years old, Winda is a trusted pro. On one mission she and Polakoff were flown into the wilderness by helicopter to search for a missing hiker. Once on the ground, Winda found the hiker's two-day-old scent and followed it far enough to tell searchers which way to go. The hiker was found soon after—tired and hungry, but finally safe.

### A Matter of Lifestyle

Teaching a SAR dog to do its job well takes a lot of hard work. SAR dogs live with their handlers, just like any pet, but require countless hours of training. "A lot of people don't realize how much time it involves," Polakoff says. "Your dog's not a battery-powered machine that you can put on a shelf and then take down and use whenever you need it. Most handlers will tell you it's a lifestyle."

Dee Wild, director of training with the Louisiana Search and Rescue Dog Team and former section chair for the National Association for Search and Rescue (NASAR) canine division, says most SAR dogs and their handlers train every day before their certification test, then one or two times per week after that. Most weekends are spent training as well. "Most handlers wouldn't even go on vacation without their dogs," Wild says. "They're constantly training."

Different SAR dogs are trained for different rescue situations. Some SAR dogs are trained

3 sock out for the dog, and lets her smell it. Winda, a German shepherd, knows the routine. She pokes her nose into the sock, takes several good sniffs, and then stares at her handler. She's ready, and Polakoff can see it.

He gives the command: "Go find!"

### For Love of the "Job"

Finding things—especially people—is what Winda does best. A trained search-and-rescue (SAR) dog, Winda loves to sniff out the lost, the injured, or, as in Nathan's case, the hiding. "For Winda," says Polakoff, who has spent 21 years training and handling SAR dogs, "the search is a game. She lives for it."

As a volunteer with Absaroka Search Dogs in Billings, Mont., Polakoff spends much of his time

10 in avalanche rescue. Others specialize in water rescue, cadaver (dead body) searches, or tracking over ground. Dogs use their keen sense of smell to pick up on the tiny scent particles that drift from every person's body. Given an item of clothing or anything else that smells like the missing person, a well-trained dog can zero in on the right scent and successfully search very large areas.

### Teamwork Takes Two

11 A good SAR dog is useless without a good handler. In the field during a search, SAR dogs and their handlers work as a team. Handlers refer to their dogs as their "partners" and develop a strong connection to their canine helpers. A dog must be taught to communicate to its handler the clues it observes with its nose. "You learn to recognize your dog's behaviors so you can tell how much scent she is picking up," Polakoff says. If the wind shifts, for instance, and the dog appears to lose the scent, the handler can move the team to a new position where conditions are better for picking up smells.

Both handler and dog must also be physically fit, as some searches cover many miles over rugged ground. Outdoor skills—basic Scout skills like how to use a map and compass and how to survive overnight while caught in a storm—are essential. And then there's the rescue itself: Once a person is found, he must be brought to safety and cared for.

13 SAR-dog work takes a lot of patience. It can be months between missions, and all that time spent practicing can start to get old. But if you're patient, the work pays off. "It takes tons of training, and there's lots of waiting around," Polakoff says. "And then once in a while you get a call and you go on a search, and when it's all over you know you've made a difference."

That is what search-and-rescue work is all about. And Polakoff and Winda have certainly helped save their share of those in need. But perhaps most important for this team is the difference their work has made in their own lives. Polakoff has 14 learned the value of unconditional love, trust, and perseverance from his dog. He has also grown to cherish the time that he, Nathan, and Winda spend outdoors and in the wild together. They may be training, and it may look like a lot of hard work, but the truth is it's fun. And he'd never stop.

Especially when Nathan is out wandering in the wilderness.





8. In the first paragraph, the phrase “few and far between” **mainly** helps the reader understand
- A. how remote the area is.
  - B. where the area is located.
  - C. what the weather is like.
  - D. when the park was created.
9. In paragraph 3, the phrase “knows the routine” shows that Winda
- A. is fond of working with her handler.
  - B. enjoys trying to find lost hikers.
  - C. likes to be rewarded for her work.
  - D. is experienced at what she does.
10. In paragraph 8, Polakoff contrasts an SAR dog with a battery-powered machine **most likely** to emphasize
- A. the feelings of the handlers.
  - B. the importance of the training.
  - C. the benefits of having a dog as a pet.
  - D. the reason the program is successful.
11. Which is the **main** point of paragraph 8?
- A. Training for the SAR program takes a lot of time.
  - B. SAR dogs live with their trainers at all times.
  - C. Training varies for different kinds of SAR dogs.
  - D. SAR dogs are treated the same as other pets.
12. In paragraph 9, the parentheses are used to show that (NASAR) is
- A. an element of the certification test.
  - B. a different name for the SAR training.
  - C. an abbreviation of the words before it.
  - D. an example of an SAR mission.
13. In paragraph 10, which word **best** replaces keen?
- A. eager
  - B. obedient
  - C. sharp
  - D. surprising

14. In paragraph 11, the phrase “in the field” refers to

- A. a type of training.
- B. a command given to the dog.
- C. the role of the handler.
- D. the area being searched.

15. What is the **main** idea of paragraph 13?

- A. The job is very rewarding.
- B. There are very few missions.
- C. There is little time to practice.
- D. The searches are challenging.

16. In paragraph 14, the word cherish is used **mainly** to show that the experience with Winda is

- A. exciting.
- B. peaceful.
- C. special.
- D. unusual.

17. The author would **most likely** agree that

- A. SAR dogs need very little supervision.
- B. being a dog handler is a satisfying job.
- C. most rescues are done without SAR dogs.
- D. training for rescue missions is unnecessary.

18. Which phrase **best** describes the organization of information in this article?

- A. in order of steps
- B. by specific topics
- C. in order of importance
- D. by sequence of events

19. The **main** purpose of this article is to

- A. inform the reader about an important rescue service.
- B. convince the reader to become an SAR dog handler.
- C. instruct the reader about wilderness hiking safety.
- D. persuade the reader to start a local SAR program.

20. Explain why the partnership between an SAR dog and its handler is so important to the success of the SAR program. Use information from the article to support your answer.

### Scoring Guide

Score	Description
4	Response provides a thorough explanation of why the partnership between an SAR dog and its handler is so important to the success of the SAR program. Explanation includes specific, relevant information from the article.
3	Response provides an explanation of why the partnership between an SAR dog and its handler is so important to the success of the SAR program. Explanation includes supporting information from the article, but lacks specificity, relevance, and/or development.
2	Response provides a partial explanation of why the partnership between an SAR dog and its handler is so important to the success of the SAR program. Explanation includes limited information from the article and/or is partially correct.
1	Response makes a vague or minimal statement of why the partnership between an SAR dog and its handler is so important to the success of the SAR program.
0	Response is totally incorrect or irrelevant.
Blank	No response.

### Scoring Notes

A thorough response will include an explanation of why the relationship between an SAR dog and its handler is important. Information to support this idea may include, but is not limited to, the following:

- The SAR dog and its handler must work together as a team; the communication between the two is a critical factor in the success of SAR missions.
- Hours of training are required for a dog to become a successful SAR dog. SAR dogs and their handlers train every day before the certification test, and then one or two times a week after that. They also train on weekends.
- An SAR handler must learn to recognize a dog's behaviors to make sure the dog is picking up a scent. A dog must be taught to communicate clues to its handler.
- Most SAR handlers say the work is a “lifestyle” — and that the special relationship with the SAR dog is a reward in itself.

#### Example of Score Point 4

The partnership between SRA Dogs and handlers is very important because they must learn to work as a team. In paragraph 11 it expresses this idea by saying that "A dog must be taught to communicate to its handler the clues it observes with its nose." In paragraph 11 it also talks about how you should learn to recognize each other's behaviors, if your dog loses scent you should be able to recognize it and move him to a place with less wind and a stronger scent. The article also talks about how the dogs and handlers should be physically fit which suggests that whatever you can do your dog has to be able to do. A handler and his dog should be willing to sacrifice and do anything for each other.

### Example of Score Point 3

The partnership between an SAR dog and its handler is so important because one or the other can't do both jobs. The SAR dog is important to the partnership because the dog sniffs and follows the scent. But at the same time the handler is just as important because he or she has the ability to help the person who is lost or stuck. The handler also is the one who trains the SAR dog so without the handler the SAR dog couldn't be trained but without the SAR dog it would take longer to find who is missing. That is why the partnership between the handler and the SAR dog is so important.

## Example of Score Point 2

### Sample 1

The partnership between the SAR and its handler is. Its important because if they don't take care of the dogs. The dogs would lose training if the owners did not practice with them. That would cause the dog to lose info on what to do on the field. And cause them not knowing the last hierarchy.



## Example of Score Point 2

### Sample 2

The partnership between an SAR dog and its handler is so important because they have to be able to trust each other. The dog also needs to be able to give the handler clues about something and the handler needs to know what those clues are and what they mean.

### Example of Score Point 1

The (sar) dog has to be close with the handler because they need a lot of training to become good rescue dogs.



## Example of Score Point 0

I think It is important  
To the SAR program  
So there is no muntany with  
the Partnership.

Read this passage about chewing gum. Then answer the questions that follow.

## The First Chewing Gum

Lee Wardlaw

### It's Greek To Me

The ancient Greeks gave us great myths, great thinkers, great sports, and great tricks. They also gave us great gum.

The first written record of gum chewing dates back to the first century A.D. In his book *De Materia Medica*, the Greek doctor-botanist Dioscorides recommended the chewing of *mastiche* (pronounced mast-tee-ka) as a treatment for minor illnesses. *Mastiche* is a yellowish resin or sap taken from the bark of small evergreen trees. Women especially enjoyed chewing *mastiche*, or mastic gum, as a way to clean their teeth and sweeten their breath.

Many Greeks and Middle Easterners chew mastic gum today, although they now combine it with beeswax for a softer, easier chew.

### Maya Borrow a Piece of Gum?

- 4 The Greeks weren't the only people in ancient times with a highly developed civilization. Over a thousand years ago, in the jungles of Central America, the Maya Indians built beautiful cities with towering temples and sophisticated highways. They created the most accurate calendar of their time and became brilliant astronomers and mathematicians.

They also enjoyed chewing gum.

- 6 One of the staples in the Mayan diet was the fruit from the sapodilla tree (now known as the chewing gum tree). While trying to harvest the fruit, someone may have accidentally cut the bark, causing a creamy juice called latex to ooze from the tree. When the latex came in contact with the air, it thickened into a gummy mass that the Maya called chicle. Centuries later, chicle would become the main ingredient in modern chewing gum.

The Maya often used chicle to make rubber shoes or galoshes. They did this by dipping their bare feet into the goo. The latex then thickened and hardened to the shape of their feet.

7 As early as the year 200, the Maya were chewing chicle after meals to aid their digestion. They also used it as a refreshing pick-me-up, just as we do today when we're tired or bored. Although chicle has no flavor, the Maya liked its smooth, velvety texture. Because it quenched their thirst, they brought chicle on long journeys, tucking a wad into their mouth to keep their cheeks and tongue moist. They even wrapped rolls of it in banana leaves to create the first "packaged" gum.

By the year 900, most Mayas had mysteriously abandoned their great cities. No one knows why they left or where they went. Only the ruins of a few pyramids remain, hidden in the tangled growth of the rain forest. Yet, some descendants of the original Maya civilization still live in the jungle—and still enjoy chewing chicle.

- |   |   |
|---|---|
| <p>21. Beeswax was used to improve gum's</p> <ul style="list-style-type: none"><li>A. color.</li><li>B. scent.</li><li>C. taste.</li><li>D. texture.</li></ul> <p>22. The <b>main</b> purpose of paragraph 4 is to describe</p> <ul style="list-style-type: none"><li>A. where the Maya Indians lived and worked in ancient times.</li><li>B. how the culture of the Maya Indians changed over the years.</li><li>C. what the Maya Indians achieved over a thousand years ago.</li><li>D. why the Maya Indians eventually left the great cities they built.</li></ul> | <p>23. Based on paragraph 6, what are <u>staples</u>?</p> <ul style="list-style-type: none"><li>A. a kind of chicle</li><li>B. a main part of the diet</li><li>C. an unusual ingredient</li><li>D. a use for chewing gum</li></ul> <p>24. Which ingredient of modern chewing gum came from the Maya Indians?</p> <ul style="list-style-type: none"><li>A. beeswax</li><li>B. chicle</li><li>C. resin</li><li>D. sapodilla</li></ul> |
|---|---|

25. What is the **main** purpose of the information in the circle?

- A. to explain how chicle is used today
- B. to describe an alternate use for chicle
- C. to tell why chicle is popular
- D. to show how chicle is formed from latex

26. The **main** idea of paragraph 7 is that early chewing gum

- A. was used to aid digestion.
- B. had a smooth texture.
- C. was taken on long trips.
- D. had many practical uses.

27. What is the **main** purpose of the passage?

- A. to entertain the reader with stories of ancient cultures
- B. to persuade the reader to research early civilizations
- C. to inform the reader about the origin of chewing gum
- D. to encourage the reader to try different kinds of chewing gum

# Mathematics Directions for Spring CRT

This Mathematics test contains three test sessions. Mark or write your answers in the Answer Booklet. Use a pencil to mark or write your answers.

This test includes three types of questions: multiple-choice, short-answer, and constructed-response questions.

For the multiple-choice questions, you will be given four answer choices—A, B, C, and D. You are to choose the correct answer from the four choices. Each question has only one answer. After you have chosen the correct answer to a question, find the question number in your Answer Booklet and completely fill in the circle for the answer you chose. Be sure the question number in the Answer Booklet matches the question number in the Test Booklet. The example below shows how to completely fill in the circle.

CORRECT MARK	INCORRECT MARKS
<input checked="" type="radio"/>	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input checked="" type="radio"/>

If you decide to change your answer to a question, erase the wrong mark completely before filling in the circle of the new answer. Be sure you have only one answer marked for each question. **If two circles are bubbled in for the same question, that question will be scored as incorrect.**

If you are having difficulty answering a question, skip the question and come back to it later. Make sure you skip the circle for the question in your Answer Booklet.

For the other types of questions in the Test Booklet, you will be asked to write your answers in the box provided. Read the question carefully. If a question asks you to explain your answer or to show your work, be sure to do so.

You may make notes or use highlighters in your Test Booklet, but you must bubble or write your final answers in your Answer Booklet. **Do not make any stray or unnecessary marks in your Answer Booklet.**

Let's work through a sample question together to be sure you understand the directions.

## Sample Question

- What is the capital of Montana?
  - Browning
  - Glendive
  - Helena
  - Missoula

## Mathematics (No Calculator)

1. Study the equations below.

$$x = (30 - 10) \div 5 + 15$$

$$y = 30 - (10 \div 5) + 15$$

$$z = 30 - 10 \div (5 + 15)$$

Which statement is true about the solutions of these equations?

- A.  $x = y$
- B.  $y = z$
- C.  $y < x$
- D.  $z < y$

2. A survey at a school found that 3 out of 5 students prefer white milk over chocolate milk. There are 340 students at the school. According to the survey, about how many students prefer **chocolate** milk?

- A. 68
- B. 113
- C. 136
- D. 170

3. Which expression has a value greater than  $\frac{1}{2}$ ?

- A.  $\frac{1}{2} - \frac{1}{8}$
- B.  $\frac{1}{2} \times \frac{1}{8}$
- C.  $\frac{1}{8} \div \frac{1}{2}$
- D.  $\frac{1}{2} \div \frac{1}{8}$

4. Which number is equivalent to  $\frac{60}{36}$  in simplest form?

- A.  $\frac{3}{5}$
- B.  $\frac{10}{6}$
- C.  $1\frac{24}{36}$
- D.  $1\frac{2}{3}$

5. The planet Mercury is approximately 36,000,000 miles from the Sun. What is this number expressed in **scientific notation**?

- A.  $3.6 \times 10^6$
- B.  $3.6 \times 10^7$
- C.  $36 \times 10^6$
- D.  $36 \times 10^7$

6. Compute:

$$12 - 0.03$$

7. What is  $\frac{12}{25}$  expressed as a percent?

8. a. On the grid in your Answer Booklet, draw an  $x$ -axis and a  $y$ -axis, label the scale, and plot the points  $P(-5, 5)$ ,  $Q(-5, 8)$ , and  $R(-1, 5)$ . Connect the points to make triangle  $PQR$ .
- b. Translate triangle  $PQR$  eight units to the right and two units down to create triangle  $KLM$ . Label triangle  $KLM$  on your coordinate plane.
- c. Reflect triangle  $KLM$  over the  $x$ -axis to create triangle  $GHI$ . Label triangle  $GHI$  on your coordinate plane.
- d. Describe a series of transformations that will move triangle  $GHI$  to the same location as triangle  $PQR$  without passing over or through triangle  $KLM$ .

### Scoring Guide

Score	Description
4	4 points
3	3 points
2	2 points
1	1 point
0	Response is incorrect or contains some correct work that is irrelevant to the skill or concept being measured.
Blank	No response.

### Scoring Notes

Part a: 1 point points correctly plotted

Part b: 1 point triangle correctly translated  $K(3, 3)$ ,  $L(3, 6)$ ,  $M(7, 3)$  or correct based on incorrect part a

Part c: 1 point triangle correctly reflected  $G(3, -3)$ ,  $H(3, -6)$ ,  $I(7, -3)$  or correct based on incorrect part a and/or part b

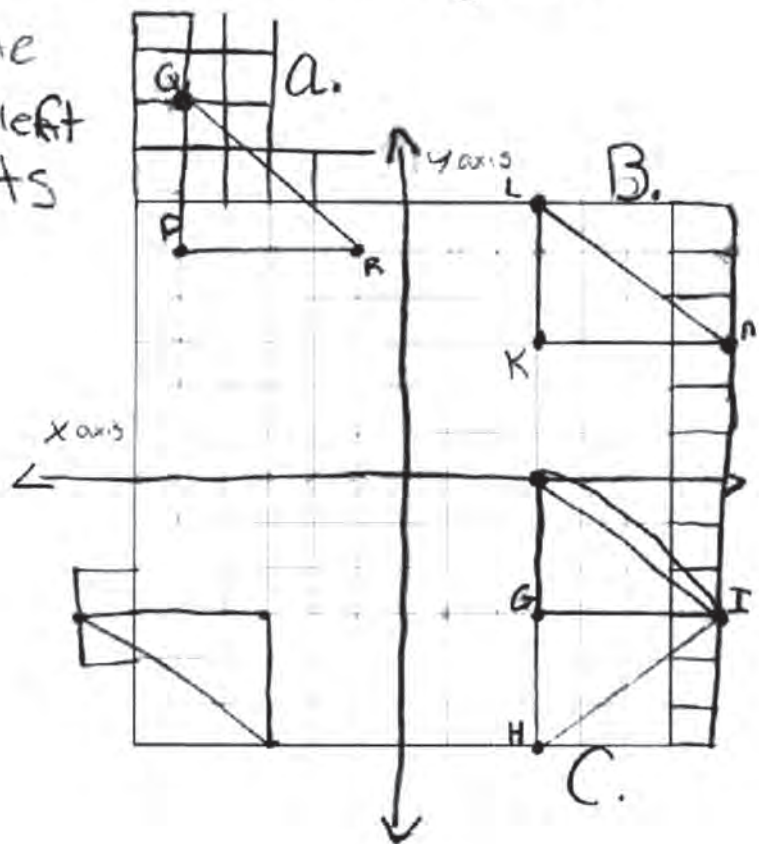
Part d: 1 point correct description, answers may vary; one possible series: translate  $GHI$  8 units to the left and 2 units down, then reflect it over the  $x$ -axis, or correct based on incorrect part a and/or part b and/or part c



## Example of Score Point 4

### Sample 1

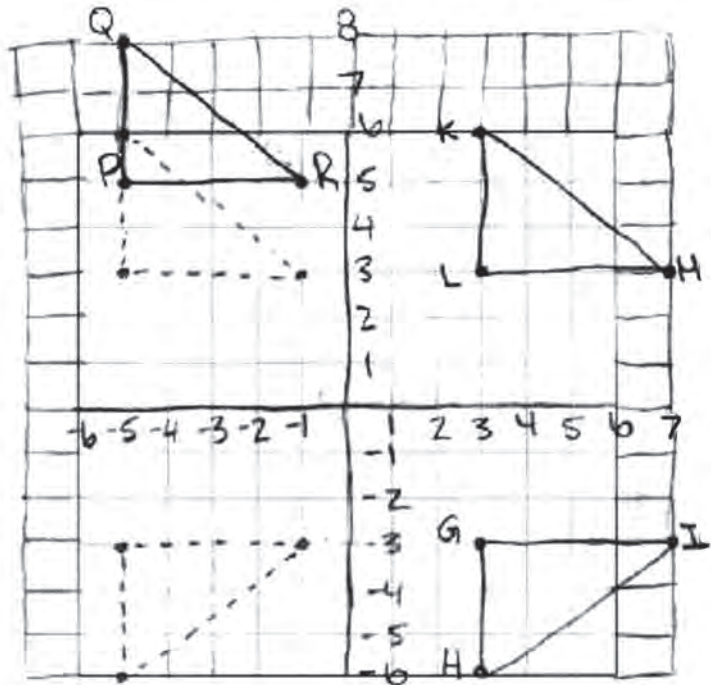
D. flip triangle GHI towards the x axis keeping points G and I where they are. then translate it 8 units left and 8 units up.



## Example of Score Point 4

### Sample 2

Slide it across the  
y axis the reflect it  
over the x axis, then  
move it up 2 units.



## Example of Score Point 3

### Sample 1

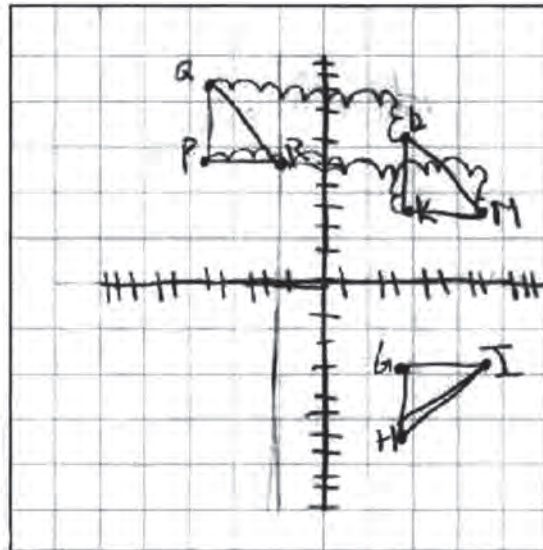
A  
P -5,5  
R -1,5  
Q -5,8

B  
K 3,3  
L 3,6  
M 7,3

C  
G 3,-3  
H 3,-6  
I 7,-3

Reflect triangle GHI over  
the y axis then rotate it  
 $180^\circ$  on point I then reflect it over  
the x axis and slide in 3 units right

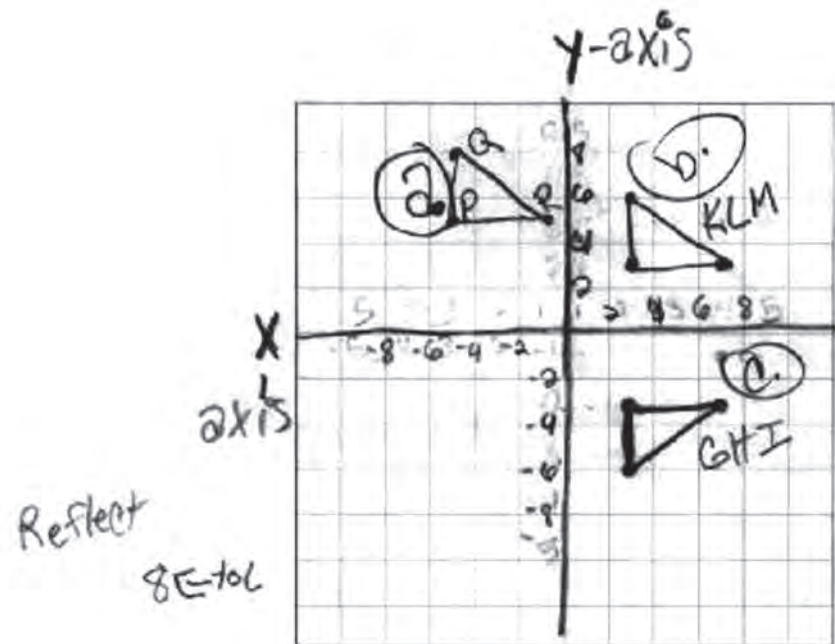
d



Example of Score Point 3

Sample 2

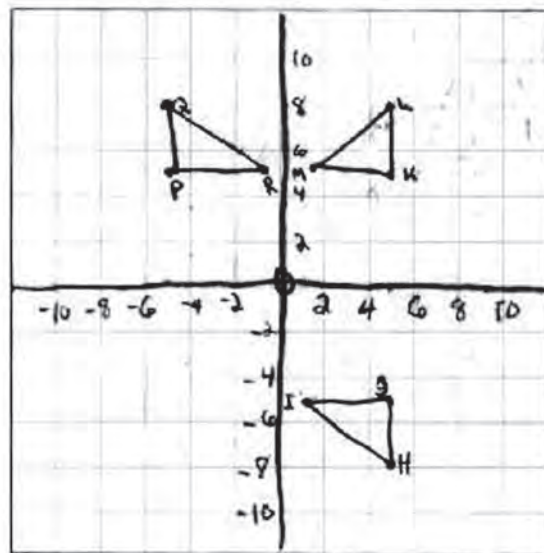
Move  $\triangle GHI$  over 8 units and reflect over  $x$ -axis.



## Example of Score Point 2

### Sample 1

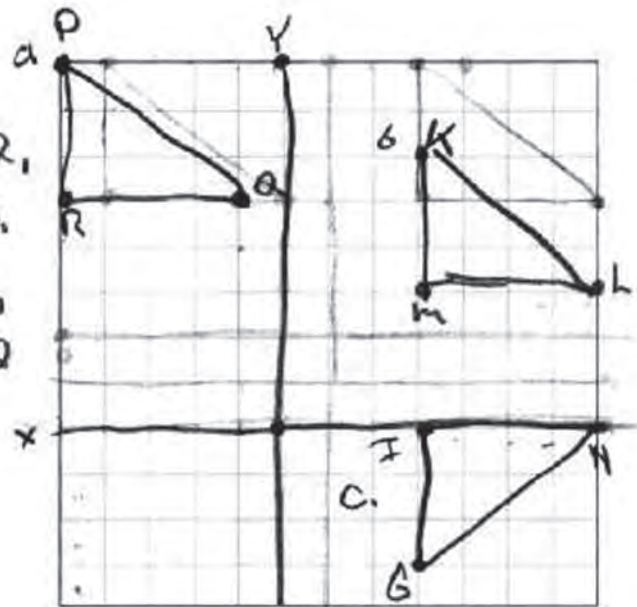
Reflect triangle GHI over the  
y-axis. Then move it up five  
squares.



## Example of Score Point 2

### Sample 2

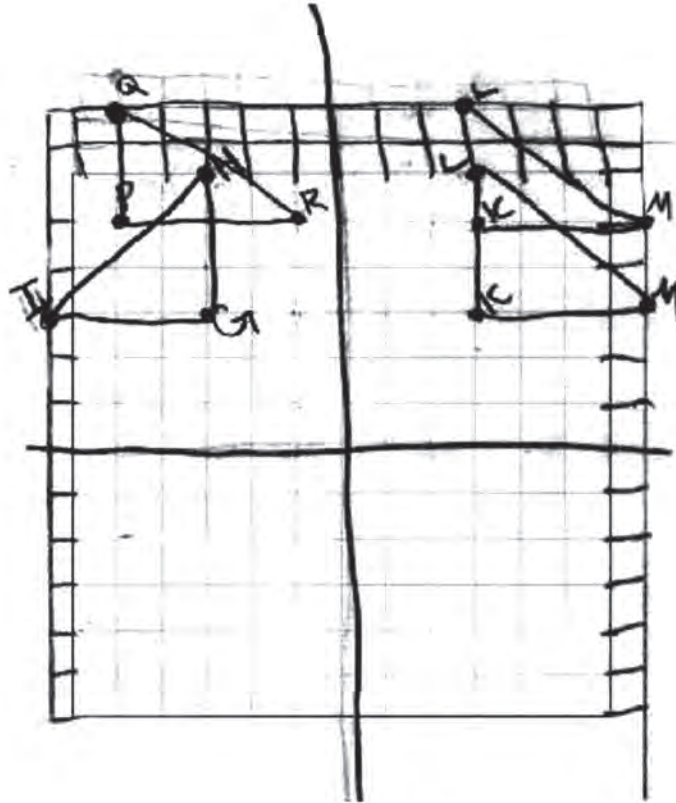
d. To move triangle  $GHI$  to  $PQR$ , you reflect  $GHI$  over  $Y$ -axis. Then reflect it over the  $x$ -axis and you have to move it up 2 units.



## Example of Score Point 1

### Sample 1

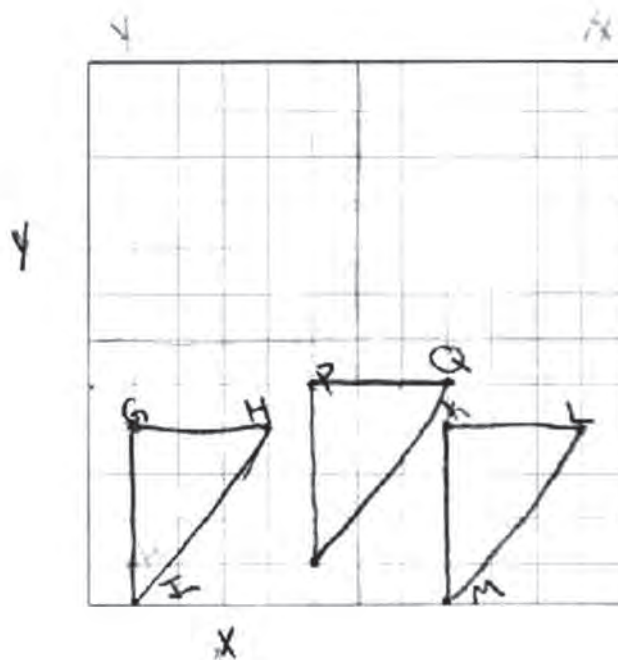
Rotate it then slide  
it up 6 times



## Example of Score Point 1

### Sample 2

Move GHI up 1, and then  
move it over right 4.





## Sample 1

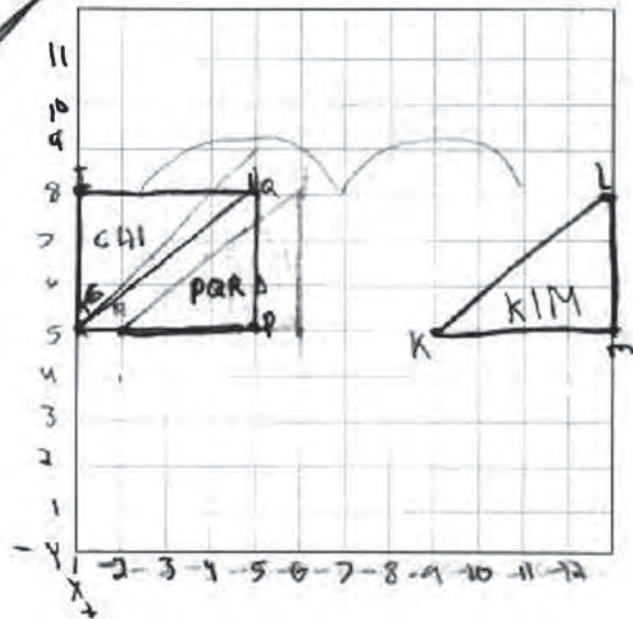
A hand-drawn diagram on a 12x12 grid. The grid has horizontal and vertical lines. A path of arrows is drawn, starting from a circle labeled '1' at the bottom-left corner (row 12, column 1). The path proceeds through several points, with arrows indicating the direction. The path includes circles labeled 1 through 12. The path starts at (12, 1), goes to (11, 2), then to (10, 3), then to (9, 4), then to (8, 5), then to (7, 6), then to (6, 7), then to (5, 8), then to (4, 9), then to (3, 10), then to (2, 11), and finally to (1, 12). The path ends at the top-right corner. There are also some additional markings, including a circle labeled '13' at the bottom-right corner (row 12, column 12) and some numbers written along the edges of the grid.

## Example of Score Point 0

### Sample 2

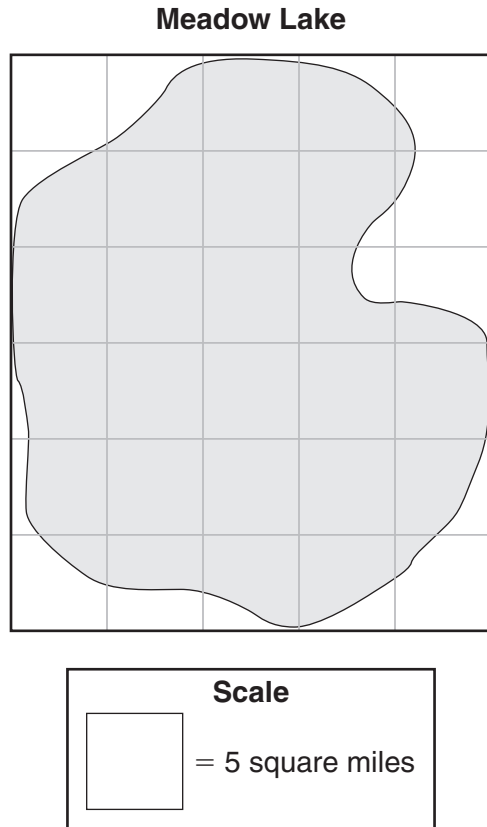
A = Triangle PQR  
B =

D Flip over 2 times to the right



## Mathematics (Calculator)

9. Study the map of Meadow Lake below.



Which is the **best** estimate for the area of Meadow Lake?

- A. 20 square miles
- B. 30 square miles
- C. 100 square miles
- D. 150 square miles

10. Hikers start climbing down a mountain from an elevation of 2400 feet above sea level. Each hour, they climb down 400 feet. Which equation can be used to find the elevation,  $e$ , of the hikers after  $h$  hours?

- A.  $e = -400 + 2400h$
- B.  $e = 400h - 2400$
- C.  $e = 2400 + 400h$
- D.  $e = 2400 - 400h$

11. Susan is creating a circle graph to show the survey results below.

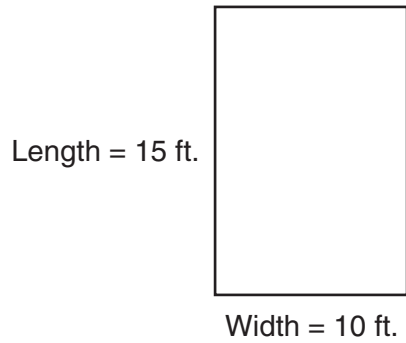
**Favorite Subject in School**

Subject	Percent of Students
Mathematics	50%
Science	25%
Social studies	10%
Other	15%

How many degrees should be in the section of the circle graph that represents science?

- A.  $25^\circ$
- B.  $54^\circ$
- C.  $90^\circ$
- D.  $180^\circ$

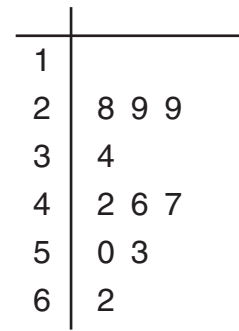
12. A diagram of a rectangular patio is shown below.



The patio is being enlarged so that its new area will be 6 times as large as it is now. The length of the patio will remain the same. What will be the width, in feet, of the new patio?

- A. 16
- B. 60
- C. 150
- D. 900

13. The stem-and-leaf plot below shows the number of students absent from Jada's middle school each day during the past two weeks.



**Key:** 5|0 = 50 students

What is the mode of the number of students who were absent during this time?

- A. 44
- B. 34
- C. 29
- D. 9

14. A movie theater offers the ticket special below.

1 ticket:	\$25.00
2 tickets:	\$23.50 each
3 tickets:	\$22.00 each
4 tickets:	\$20.50 each
5 tickets:	\$19.00 each

Based on the pattern in the table, what is the **least** number of tickets that must be bought to make the cost of each ticket \$10.00?

- A. 10 tickets
  - B. 11 tickets
  - C. 12 tickets
  - D. 13 tickets
15. Study the equation below.

$$\frac{8x}{5} = 40$$

Which equation could be the next step in solving the equation?

- A.  $\frac{x}{5} = 32$
- B.  $\frac{x}{5} = 48$
- C.  $8x = 45$
- D.  $8x = 200$

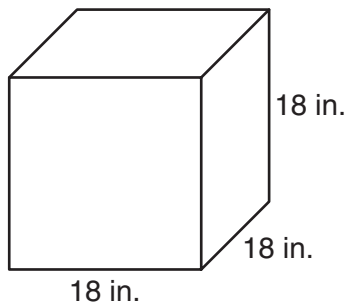
16. Mr. Stuart packed 1 suit, 4 shirts, 3 ties, and 2 belts for a trip. How many different outfits consisting of 1 suit, 1 shirt, 1 tie, and 1 belt can he make?

- A. 4
- B. 10
- C. 14
- D. 24

17. A store is having a promotion. Every third customer receives a hat, and every fifth customer receives a T-shirt. No customers come in the store twice. Of the first 100 customers, how many receive **both** a hat and a T-shirt?

- A. 5
- B. 6
- C. 15
- D. 30

18. A cardboard box is shown below.



What is the volume, in cubic feet, of this box?

- A. 3.375 cu. ft.
  - B. 4.5 cu. ft.
  - C. 6 cu. ft.
  - D. 18 cu. ft.
19. Which expression is equivalent to  $25(a + b + c)$ ?
- A.  $25abc$
  - B.  $25 + abc$
  - C.  $25a + b + c$
  - D.  $25a + 25b + 25c$

20. The chart below shows a pattern.

$x$	$y$
1	5
2	8
3	11

What is the rule for this pattern?

- A.  $y = 5x$
  - B.  $y = 3x + 2$
  - C.  $y = 2x + 4$
  - D.  $y = 4x + 1$
21. Jeremy bought 3 CDs that cost \$15 each and 3 books that cost \$5 each. To find his total, he used the expression below.

$$(3 \times 15) + (3 \times 5)$$

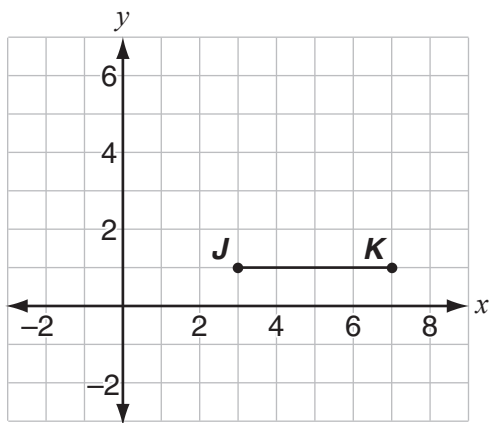
Which expression shows another way Jeremy could find his total?

- A.  $3 \times (15 + 5)$
- B.  $3 \times 15 \times 5$
- C.  $(3 + 15) \times (3 + 5)$
- D.  $3 + (15 \times 5)$

22. Kelly has 300 stitches on her knitting needle. The number of stitches on the needle decreases by 4 for each row she knits. Which equation can be used to find the number of stitches,  $n$ , on Kelly's knitting needle after she knits  $r$  rows?

A.  $n = 300 - 4r$   
B.  $n = 300 - 4 - r$   
C.  $n = 4 - 300r$   
D.  $n = (300 - 4)r$

23. Segment  $JK$  is graphed below.



Which point, if connected to points  $J$  and  $K$ , would complete a right triangle?

A.  $(7, -2)$   
B.  $(5, 7)$   
C.  $(5, -3)$   
D.  $(4, 1)$

24. In a jar, there are 13 cards with a boy's name on each card and 14 cards with a girl's name on each card. One of these cards is chosen at random. What is the probability that the card will have a girl's name on it?

A.  $\frac{1}{14}$   
B.  $\frac{13}{27}$   
C.  $\frac{1}{2}$   
D.  $\frac{14}{27}$

25. The chart below lists the fastest speeds certain animals can move.

**Animal Speeds**

Animal	Fastest Speed (mph)
Marine mammal Killer whale	35
Land mammal Cheetah	70
Fish Sailfish	68
Bird Peregrine falcon	150
Insect Dragonfly	36
Snake Black mamba	14

What is the range of speeds of the animals listed in the chart?

- A. 150
- B. 136
- C. 62
- D. 52

26. Mr. Davis has his classroom arranged in tables of 4 students. Students completely fill each table before sitting at a new one. The number of students in each of his classes is shown in the chart below.

Class	Number of Students
1	25
2	24
3	27
4	21

Which class will have 1 table with only 3 students?

- A. Class 1
- B. Class 2
- C. Class 3
- D. Class 4



27. Mary drew a triangle  $QRS$ . Angle  $QRS$  is  $100^\circ$ , and the other two angles in the triangle are congruent. What is the measure of angle  $RSQ$ ?

- A.  $100^\circ$
- B.  $80^\circ$
- C.  $60^\circ$
- D.  $40^\circ$

28. Students are making graphs of their own height over time. Which graph is **best** to use to show a student's change in height over time?

- A. circle graph
- B. line graph
- C. pictograph
- D. stem-and-leaf graph

29. A taxi service charges the rates shown in the table below.

**Taxi Service Rates**

Number of Miles $m$	Cost $c$
1	\$4.25
2	\$5.50
3	\$6.75
4	\$8.00

Which equation can be used to calculate the cost,  $c$ , of the taxi service when the ride is  $m$  miles long?

- A.  $c = m + 3$
- B.  $c = m + 1.25$
- C.  $c = 1.25m + 3$
- D.  $c = 3m + 1.25$

30. A circular stage has a 30-foot diameter. Which measure is closest to the distance around the stage?

- A. 50 feet
- B. 100 feet
- C. 200 feet
- D. 700 feet

# Acknowledgments

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